

Which one is it?

Specimens shown are adults, actual size



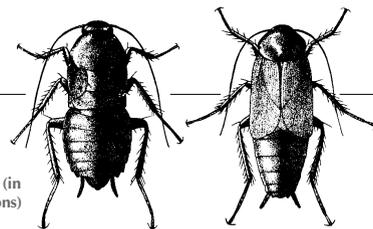
Most common roach in New York

German Cockroach
Blattella germanica
a.k.a. "Croton bug"

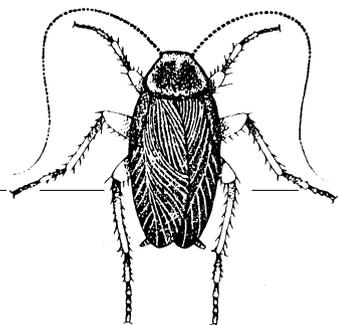


Female on left (in both illustrations)

Brownbanded Cockroach
Supella longipalpa



Oriental Cockroach
Blatta orientalis
a.k.a. "Water bug" or "Black beetle"



American Cockroach
Periplaneta americana
a.k.a. "Palmetto bug" or "Water bug"

Adult size	0.5 inch	0.5 inch	1 to 1.25 inch	1 to 1.75 inch
Thorax ("Body")	Light brown. Two black stripes on pronotum (back of head).	Light brown. Light colored bands on wings (both sexes). Bands more noticeable in nymphs than adults.	Dark, reddish-brown to black.	Brown. Light markings on pronotum (back of head). Wings one color.
Wings	Cover tip of abdomen.	Female's wings do not quite cover the tip of her abdomen; male's wings do cover tip of his abdomen.	Traces of wings on females; short wings on males.	Adults only. Female: equal in length to abdomen; Male: extend past tip of abdomen.
Egg Case	Light brown. Female carries it until 1-2 days before hatch. 	Light brown. Egg case glued to ceilings, picture frames, furniture, in closets or other dark places. 	Nearly black. Egg case deposited on debris or food in sheltered area. 	Dark brown. Blends with surroundings; hidden in cracks, soft wood, moist debris. 
Feces	Pepper-like specks on the wall, near nest site.	Pepper-like specks on the wall, near nest site.	Similar to mouse droppings. Under magnifier, one end is rounded, the other is slightly tapered.	Similar to mouse droppings. Under magnifier, blunt with ridged markings.
Habitat	Warm, moist areas. Prefers kitchens and bathrooms. Likes to squeeze into tight cracks.	Throughout the house, prefers high locations. Also in closets, under furniture, and in heat-generating appliances.	Below ground level, in damp crawl spaces, basements, and floor drains. Can overwinter in cisterns and other protected outdoor areas.	Usually in commercial structures. Prefers warm, moist areas in basements, near heating ducts, pipe chase areas, and sewers. Forages mostly on first floors.

Note: The Pennsylvania wood roach is sometimes discovered in homes during warm months. It is about the size of the German and brownbanded but does not reproduce inside and dies quickly.

For more information:

Buoniello, R. 1999. *Integrated Pest Management Around the Home and Garden*. Cornell University Program on Breast Cancer and Environmental Risk Factors in New York State, Ithaca, NY. **To order, call (607) 254-2893 or check www.cfe.cornell.edu/bcerf/FactSheet/Pesticide/fs31.ipm**

Klass, C. and K. Snover. 2000. *Pest Management Around the Home: Cultural Methods*. Miscellaneous Bulletin S74, Part I. Cornell Cooperative Extension, Ithaca, NY. **To order, call (607) 255-2080.**

Lifton, B. 1991. *Bug Busters: Poison-Free Pest Controls for Your House & Garden*. Avery Publishing Group, Inc., Garden City Park, NY 254 pp.

Mallis, A. 1996. *The Handbook of Pest Control*, 8th ed. Edgell Communications, Duluth, MN.

Ogg, B., D. Ferraro, and C. Ogg. *Cockroach Control Manual*. University of Nebraska Institute of Agriculture and Natural Resources. **To order, call (402) 441-7180 or check <http://ianrwww.unl.edu/ianr/pat/cocktoc.htm>**

Olkowski, W., S. Daar, and H. Olkowski. 1991. *Common-Sense Pest Control*. Taunton Press, Newtown, CT, 716 pp.

Smith, E. and R. Whitman. 1992. *NPCA Field Guide to Structural Pests*. National Pest Control Assn. **To order, call (703) 573-8330 or check www.pestworld.org/homeowners/spotlight/spotlight.html**

Other resources:

- Find your local Cooperative Extension office: www.cce.cornell.edu

- NYS IPM Program: www.nysaes.cornell.edu/ipmnet/ny
- NYS Dep't. of Health, Center for Environmental Health: **To find local health dep't. phone numbers, call (800) 458-1158 or check www.health.state.ny.us**
- Cornell's Pesticide Management Education Program: <http://pmep.cce.cornell.edu>
- National Pesticide Telecommunications Network: **Call (800) 858-PEST [7378] or check <http://ace.orst.edu/info/nptn>**
- "Featured creatures" (University of Florida): www.ifas.ufl.edu/~insect
- Least toxic cockroach control methods in schools (U. Florida): www.ifas.ufl.edu/~schoolipm/tp3.htm

Can't I live with a few roaches?

Perhaps they don't disgust or embarrass you, but there are good reasons to exclude cockroaches from your home. A cockroach will travel through many types of wastes then walk over, and defecate on, your kitchen counters, plates, silverware, and any accessible food. Cockroaches are known to carry disease-causing bacteria, although their ability to transmit diseases to humans is under study. They're still a significant health concern because they trigger allergies that contribute to asthma.

Finding even one roach warrants alertness. All roach problems start small, but roaches reproduce rapidly, so early intervention is highly recommended. Look inside for a common-sense approach to cockroach management.

The New York State IPM Program



We encourage people to adopt a sustainable approach to managing pests, using methods that minimize environmental, health, and economic risks. For more

information: NYS Integrated Pest Management Program, NYSAES, Geneva, NY 14456; 1-800-635-8356; <www.nysaes.cornell.edu/ipmnet/ny>. For additional copies of this brochure (IPM No. 602), contact your local Cooperative Extension office or the NYS IPM Program.

Produced by the Community IPM Program, which is funded by Cornell University, Cornell Cooperative Extension, and the New York State Department of Environmental Conservation. Based on a brochure by Kathleen Sharpe. Editing/design: Jill Shultz; Carrie Koplinka-Loehr. Illustrations: Karen English-Loeb (mirror/flashlight); U.S. Dept. of Health, Education, and Welfare (cockroaches). House interior and cockroach egg capsules are copyrighted by the Regents of the University of California (Leaflet number 21035, Controlling Household Cockroaches) and used by permission. **The recommendations in this publication are not a substitute for pesticide labeling. Read the label before applying any pesticide.** Cornell Cooperative Extension provides equal program and employment opportunities. 7M AP 5/00.

Found a cockroach?

(Saw a GAZILLION?)

Don't panic.

Cornell
Cooperative
Extension



Why can't I just spray?

Because roaches taste their food before eating it, they learn to avoid chemically treated surfaces. This habit limits the long-term effectiveness of some insecticides; also, roach eggs are not affected by pesticides. Aerosol sprays often make roaches scatter, so those that aren't killed can return.

Integrated pest management (IPM) focuses on solving your current problem and preventing future invasions. Make your home unfit for roaches—fix the problem at its source—or you'll likely welcome roaches again.



German cockroach
Two black stripes
on back of head

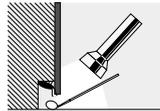
To find the lair, think like a roach

Four species of cockroach are common pests in New York: the German cockroach, American cockroach, oriental cockroach, and brownbanded cockroach.

Cockroaches are nocturnal and live in groups. They seek cracks and crevices that are warm, dark, and moist; they also live inside cardboard and paper bags. Roaches eat *anything* that is organic—even cardboard and the glue that binds books together. They need water, although the brownbanded can live for several weeks with minimal quantities. Cockroaches prefer to remain near their food sources and shelter. Take away both and the roaches will almost certainly seek a more hospitable home.

To begin a management program, try to find the source of the infestation and discover which roach is present. Use "sticky traps" to capture the roaches and the chart in this brochure to identify the species, or consult other knowledgeable sources.

Draw a simple diagram of each room, then begin your inspection. Use a flashlight and dental mirror to peek behind or under cabinets. Search for living or dead cockroaches, shed exoskeletons ("skins"), egg cases, and feces. You can also find their hiding places by quietly entering a dark room and watching where they run when you turn on the lights.



Place the sticky traps near any evidence of roaches, near cracks in the basement, or as indicated in the kitchen diagram. Mark these spots on your drawing, write the date on the traps, and check the traps weekly. Record the date, location, species, and number of roaches caught. Later on, you can set more traps to judge the success of your efforts.

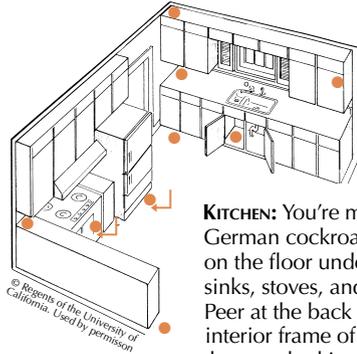
Check all the rooms

BATHROOMS: Moisture is the lure here. Look behind the tub, shower, sinks, and toilet, and around pipes.

BASEMENT: American and oriental cockroaches frequent basements, coming in from sewers and landfills. Inspect inside floor drains. Check the foundation for cracks.

Is your home fit for a cockroach?

OTHER ROOMS: Vacuum drapes and furniture, especially under cushions and in crevices. Empty and clean book shelves, and shake out the books. Check closets, desks, clocks, radios, stereos, computers, televisions—wherever it's warm and dark.



Dots show placement
of 9 sticky traps (2 go
underneath appliances)

KITCHEN: You're most likely to find German cockroaches here. Look on the floor underneath and behind sinks, stoves, and other appliances. Peer at the back of, and along the interior frame of cabinets and drawers, looking into any spaces.

Inspect corners, especially those under tables and chairs. Examine the edges of drop ceilings, especially above cooking and dish-washing areas. Check the back of the refrigerator and the door seals.

This inspection will reveal the "hot spots," the places of greatest cockroach activity. Focus on these areas.

Eliminate roach snacks

Kitchens provide ideal habitats for German and brown-banded cockroaches. Concentrate on making your kitchen uninviting to roaches. Practice *strict* sanitation. Tolerate no grease, crumbs, grunge, or clutter anywhere.

Clean all surfaces, especially between counters and appliances. Scrub underneath and behind refrigerators and stoves (floor and walls). Remember the corners, drawers, cabinets, and fixtures.

Store all food, including pet food, in tightly sealed containers. Don't leave bowls of pet food on the floor overnight.

Food waste must also be carefully guarded. Keep your garbage, compost, and recyclables in tightly sealed containers. Empty and clean them daily, preferably in the evening, because cockroaches are most active at night.

Repair damaged refrigerator door seals. (If the insulation's infested, use a bait or call a professional.)

Wipe up cockroach feces with a disposable cloth. Feces contain a pheromone that attracts roaches; newly hatched roaches feed on the feces of older roaches.

Reduce moisture

Repair leaks, insulate pipes, and caulk gaps around sinks, tubs, and pipes to prevent water from getting behind walls. Repair worn grouting; moisture-proof walls behind dishwashers. Secure countertops and the splashboard behind the kitchen sink.

Hang your dishrag and shower mat in the open to dry. Keep the bathroom as dry as possible. Wipe up spills and puddles. Don't let water stand in houseplant dishes or in the pan under the refrigerator.

Destroy their refuges

INSIDE: Eliminating clutter is a critical part of roach management. A clean but cluttered home may still harbor roaches if there's ample shelter and access. Do not store paper bags, containers, cardboard, magazines, newspaper, equipment, boxes, or clothes on the floor, or wedge paper bags between appliances or inside cabinets.

If there are gaps in your kitchen cabinets or between pieces of wood shelving, clean, vacuum, and caulk them. Where possible, keep moveable storage shelves 12" off the floor and 8" away from walls for better inspection.

"Lock the doors" on cockroaches by sealing all the small openings that are pathways into your home. If you live in an apartment building, pay special attention to walls that adjoin other units.

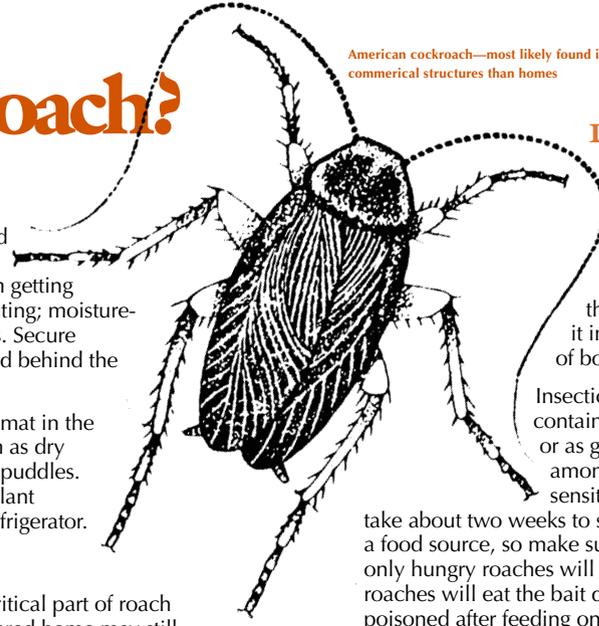
Repair cracks and crevices in basement walls and floors (clean, then seal with cement, caulk, grout, or latex paint). Steel wool may be inserted into cracks for a quick fix. Cover drains in the basement and floors with window screening. Tighten loose windows and weather-strip doors.

Seal gaps around water, gas, and heating pipes, both inside and out. Use heat-tolerant caulk to seal gaps around heating and hot water pipes, and other caulks to seal gaps around cold water and gas pipes, heat registers, air ducts, electrical chases, and false ceilings.

Replace missing or damaged baseboards.

OUTSIDE: Remove debris. Cut back ground cover near buildings. Move garbage cans and firewood away from buildings.

American cockroach—most likely found in drains or sewers; more common in commercial structures than homes



Disposing of roaches

To quickly reduce cockroach populations, vacuum them with the hose attachment, preferably using a machine equipped with a HEPA filter. As soon as you're done, remove the vacuum bag and quickly seal it inside another bag, then dispose of both bags.

Insecticide baits (available in small containers that look like hockey pucks, or as gel) are highly effective and are among the more environmentally sensitive controls. Be patient; it will

take about two weeks to see results. These baits act as a food source, so make sure no other food is available—only hungry roaches will be attracted to them. Some roaches will eat the bait directly, while others will be poisoned after feeding on those roaches or their feces. Don't use pesticides or cleaning compounds near the baits because they may repel the roaches.

Set the baits in the "hot spots," close to the roaches' shelter, or directly within their travel paths—not out in the open. Placement is crucial: for German and brown-banded cockroaches, position bait stations next to walls and flush in corners. For American and oriental cockroaches, set bait stations in the basement near sewer or floor drains or in damp crawl spaces.

Other IPM options include insecticide dusts, such as

- silica aerogel (a desiccant that damages the roach's waxy coating, causing it to shrivel and die);
- a commercial product containing boric acid (a desiccant and stomach poison);
- a pyrethrum product (a nerve toxin derived from chrysanthemums).

Follow the manufacturers' directions carefully.

Extreme temperatures will kill cockroaches. Although you probably can't alter your home's environment to this degree, winter cold can be used to disinfect household items such as furniture or paper goods. Place them outdoors when it's below 20°F for a few days to freeze the cockroaches.

You may prefer to hire a pest management professional, especially if faced with a severe infestation. This doesn't mean you have to abandon IPM methods. Buoniello's fact sheet (see the back of this brochure) includes valuable information about choosing and working with a pest management company.

If you live in a multi-family dwelling, speak to the building managers about the problem. If the response is unsatisfactory, contact your local health department.

Think you're done? Check again:

Keep them starved and parched

- ✓ Store food in tightly closed containers off the floor and away from walls, or keep it in the refrigerator. Rotate stock, inspect.
- ✓ Scour the kitchen. Clean refrigerator; stove; cabinets; drawers; counters; floors; walls; corners; fixtures; and under the sink. Keep it clean!
- ✓ Empty and secure trash, compost, and recyclables every evening.
- ✓ Repair leaks. Seal gaps around pipes, tubs, and sinks. Keep bathroom dry. Eliminate other "watering holes."
- ✓ Wash and dry dishes promptly. Wipe up spills and puddles.
- ✓ Don't leave pet's food or water unattended.

Eliminate their shelter

- ✓ Remove clutter and debris (both inside and outside).
- ✓ Secure loose wallpaper, counters, and splashboard.
- ✓ Check inside equipment (even motors—anywhere it's warm and dark) such as clocks, televisions; stereos; radios; and computers.
- ✓ Vacuum furniture and drapes.
- ✓ Seal gaps in cabinets and woodwork.
- ✓ Empty and clean bookshelves.

Prevent future invasions

- ✓ Close openings around pipes, vents, drains, registers, ducts, and electrical chases.
- ✓ Fix cracks in walls (inside and out) and floors.
- ✓ Tighten doors, windows, and screens.
- ✓ Inspect bags, boxes, furniture, and other items before bringing them into your home.